

Recovery Plan Action Status

Plan Name: Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area

Plan Status: Final

Plan Date: 30-Sep-98

Lead Agency: USFWS

Lead Office: Sacramento Fish And Wildlife Office

(916)

414-6600)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Bay checkerspot butterfly (Euphydryas editha bayensis), Tiburon mariposa lily (Calochortus tiburonensis), Metcalf Canyon jewelflower (Streptanthus albidus ssp. albidus), Pennell's bird's-beak (Cordylanthus tenuis ssp. capillaris), San Mateo woolly sunflower (Eriophyllum latilobum), Coyote ceanothus (Ceanothus ferrisiae), White-rayed pentachaeta (Pentachaeta bellidiflora), Presidio clarkia (Clarkia franciscana), Fountain thistle (Cirsium fontinale var. fontinale), Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum), Tiburon jewelflower (Streptanthus niger), San Mateo thormint (Acanthomintha obovata ssp. duttonii), Santa Clara Valley dudleya (Dudleya setchellii)	2	1.1	Establish cooperative programs with participants from the public and private sector	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, California Department of Fish and Game	Other: Information and Education	Internal Technical Assistance	Cooperative program established with Stuart Weiss and San Mateo Parks for reintroduction of Bay Checkerspot into Edgewood Park.

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Bay checkerspot butterfly (Euphydryas editha bayensis), Fountain thistle (Cirsium fontinale var. fontinale), Marin dwarf-flax (Hesperolinon congestum), San Mateo thormmint (Acanthomintha obovata ssp. duttonii)	1	2.1.11	Secure and protect serpentine habitat on Pulgas Ridge (San Mateo County) for multiple species	Not Started			California Department of Transportation, San Francisco Water Department, U.S. Fish and Wildlife Service, California Department of Fish and Game	Acquisition: Easement	Internal Field Assistance	
Bay checkerspot butterfly (Euphydryas editha bayensis), White-rayed pentachaeta (Pentachaeta bellidiflora), Fountain thistle (Cirsium fontinale var. fontinale), San Mateo thormmint (Acanthomintha obovata ssp. duttonii)	1	2.1.13	Secure and protect serpentine habitat in Triangle area (San Mateo County) for multiple species	Not Started			California Department of Transportation, San Francisco Water Department, U.S. Fish and Wildlife Service, California Department of Fish and Game	Acquisition: Easement	Internal Field Assistance	

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Fountain thistle (Cirsium fontinale var. fontinale)	1	2.1.14	Secure and protect serpentine habitat in Woodside Glens / Canada College / Redwood City (San Mateo County) for multiple species	Ongoing Current			San Mateo County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game, Private landowners	Acquisition: Easement	Volunteer	Contact has been made by CNPS with landowners of part of Woodside Glens occurrence of fountain thistle however no work or agreements have been started yet. Occurrence found on Stulsaft Park owned by Redwood City. This population and the CalTrans population at Woodside are being managed by removal of pampas grass and giant reed.
Bay checkerspot butterfly (Euphydryas editha bayensis), Tiburon mariposa lily (Calochortus tiburonensis), Pennell's bird's- beak (Cordylanthus tenuis ssp. capillaris), Coyote ceanothus (Ceanothus ferrisae), Presidio clarkia (Clarkia franciscana), Fountain thistle (Cirsium fontinale var. fontinale), Tiburon paintbrush (Castilleja affinis ssp. neglecta), Santa Clara Valley dudleya (Dudleya setchellii)	2	2.2.28	Secure and protect serpentine habitat Northwest of Healdsburg (Sonoma County) for Arctosaphylos bakeri ssp. Bakeri	Not Started			Sonoma County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Acquisition: Easement	Internal Field Assistance	

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Bay checkerspot butterfly (Euphydryas editha bayensis), San Mateo woolly sunflower (Eriophyllum latilobum), White-rayed pentachaeta (Pentachaeta bellidiflora), Fountain thistle (Cirsium fontinale var. fontinale), Marin dwarf-flax (Hesperolinon congestum), San Mateo thornmint (Acanthomintha obovata ssp. duttonii)	1	5.17	Conduct surveys in historic and potential habitat on San Francisco Peninsula (south of Presidio) (San Francisco County) for Hesperolinon congestum	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service	Research: Environmental Contaminants	Graduate Student	

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Fountain thistle (Cirsium fontinale var. fontinale)	1	5.19	Conduct necessary research at Crystal Springs area (includes Buri Buri and Pulgas Ridges and San Mateo Creek area) (San Mateo County) for multiple species	Ongoing Current			Unknown	Research: Habitat Status	Graduate Student	Researchers at Washington University have conducted studies on fountain thistle habitat needs and collected data on pollinators.
White-rayed pentachaeta (Pentachaeta bellidiflora), Fountain thistle (Cirsium fontinale var. fontinale), San Mateo thornmint (Acanthomintha obovata ssp. duttonii)	2	5.22	Conduct necessary research at Triangle (San Mateo County) for multiple species	Not Started			California Department of Transportation, San Francisco Water Department, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Management Techniques	Graduate Student	

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Bay checkerspot butterfly (Euphydryas editha bayensis), Metcalf Canyon jewelflower (Streptanthus albidus ssp. albidus), Coyote ceanothus (Ceanothus ferrisiae), Fountain thistle (Cirsium fontinale var. fontinale), Tiburon paintbrush (Castilleja affinis ssp. neglecta), Santa Clara Valley dudleya (Dudleya setchellii)	1	5.25	Conduct surveys in historic and potential habitat near Niles (alameda County) for Streptanthus albidus peramoenus	Not Started			U.S. Fish and Wildlife Service	Research: Habitat Status	Graduate Student	

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Fountain thistle (<i>Cirsium fontinale</i> var. <i>fontinale</i>), San Mateo thornmint (<i>Acanthomintha obovata</i> ssp. <i>duttonii</i>)	2	5.43	Throughout species' ranges: Develop plant propagation techniques for all listed species and species of concern	Ongoing Current			U.S. Fish and Wildlife Service	Research: Habitat Requirements	Graduate Student, Species Expert	Seed from San Mateo thornmint has been germinated at Jepson Herbarium, UC Berkeley. Fountain thistle has been germinated by Washington University researchers.
White-rayed pentachaeta (<i>Pentachaeta bellidiflora</i>), Presidio clarkia (<i>Clarkia franciscana</i>), Fountain thistle (<i>Cirsium fontinale</i> var. <i>fontinale</i>), San Mateo thornmint (<i>Acanthomintha obovata</i> ssp. <i>duttonii</i>)	1	6.1.1	Store the seeds from multiple plant taxa	Ongoing Current	FY 2007		San Francisco Water Department, U.S. Fish and Wildlife Service	Research: Genetics	Species Expert	Some <i>Clarkia franciscana</i> seeds collected by UC Berkeley Botanic Garden. Fountain thistle seed collected from 2008 - 2010 has been stored at Rancho Santa Ana Botanic Garden. Some San Mateo thornmint seed is stored at UC Berkeley botanic garden. White-rayed pentachaeta seed was collected in 2010.

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Fountain thistle (Cirsium fontinale var. fontinale)	2	6.1.2	Store viable seeds for the following plant taxa: Ceanothus ferrisae Cirsium fontinale var. fontinale Lessingia arachnoidea Lessingia micradenia var. glabrata Lessingia micradenia var. micradenia	Partially Complete	FY 2007		California Department of Transportation, Rancho Santa Ana Botanic Garden, San Francisco Water Department, University of California at Berkeley, San Mateo County, California, Stanislaus County, California, Marin County, California, San Francisco County, California, Santa Clara County, California, Contra Costa County, California, Alameda County, California, Sonoma County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game	Research: Habitat Requirements	Graduate Student	Cirsium fontinale var. fontinale seed has been collected 2008-2010 and stored at Rancho Santa Ana Botanic Garden. Ceanothus ferrisae seed was collected in 2010 and stored in botanic gardens.
Fountain thistle (Cirsium fontinale var. fontinale)	3	7.2	Review species listing status for species of concern Cirsium fontinale var. campylon	Ongoing Current			U.S. Fish and Wildlife Service	Other: Regulations	Internal Technical Assistance	Review conducted in year 5